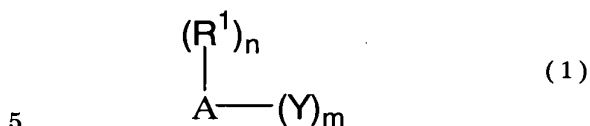
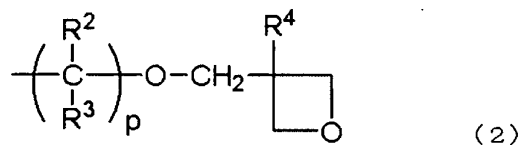


Claims

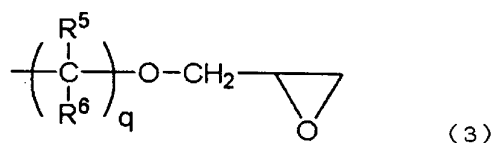
1. A curable polycyclic compound represented by the following formula (1):



{wherein A is a di- to hexa-valent group derived from a polycyclic hydrocarbon compound; R¹ is an alkyl group of 1 to 4 carbon atoms, a perfluoroalkyl group of 1 to 4 carbon atoms, or a fluorine atom; n is an integer of 0 to 2; m is an integer of 2 to 4; and Y is a group represented by the following formula (2):

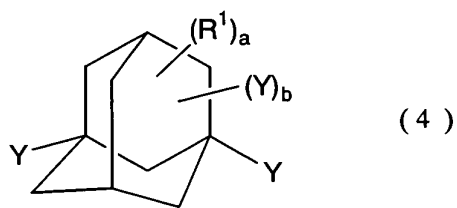


(wherein R² and R³ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; R⁴ is a methyl group or an ethyl group; and p is an integer of 0 to 4), or a group represented by the following formula (3):



(wherein R⁵ and R⁶ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; and q is an integer of 0 to 4)).

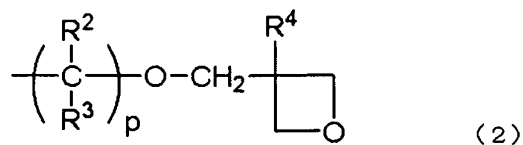
2. A curable polycyclic compound according to Claim 1, wherein the formula (1) is the following formula (4):



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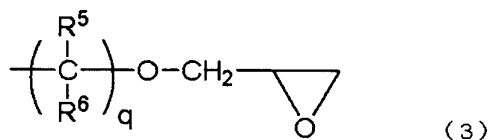
{wherein R¹ is an alkyl group of 1 to 4 carbon atoms, a perfluoroalkyl group of 1 to 4 carbon atoms, or a fluorine atom; a is an integer of 0 to 2; b is an integer of 0 to 2; and Y is a group represented by the following formula (2):

15



(wherein R² and R³ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; R⁴ is

a methyl group or an ethyl group; and p is an integer of 0 to 4), or a group represented by the following formula (3):



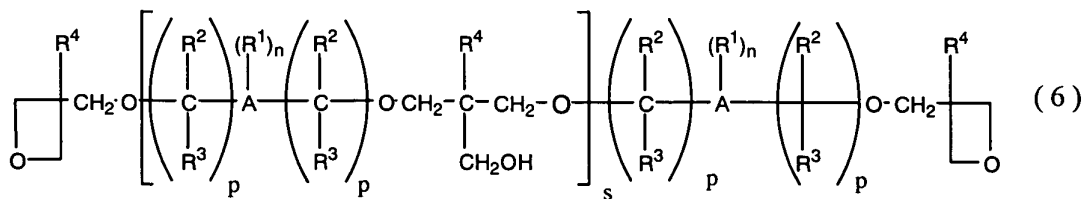
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(wherein R⁵ and R⁶ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; and q is an integer of 0 to 4)).

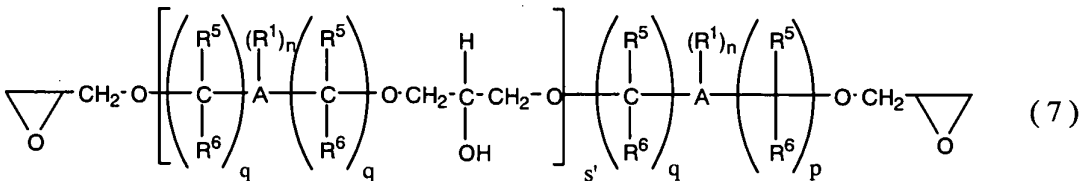
3. A curable polycyclic compound according to Claim 2,
10 wherein, in the formula (4), a, p and q are 0 (zero).

4. A curable polycyclic compound according to Claim 1,
wherein the content of the halogen molecule or halogen ion
contained as an impurity is 100 to 2,000 ppm.

5. A curable polycyclic compound represented by the
15 general formula (6) or (7):



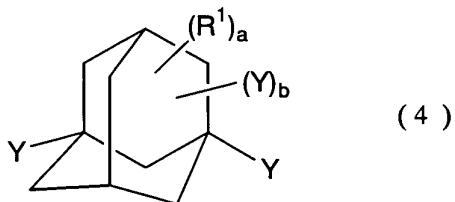
{wherein A, R¹, R², R³, n and p have the same definitions as
20 in the formula (1); and s is an integer of 1 to 3}



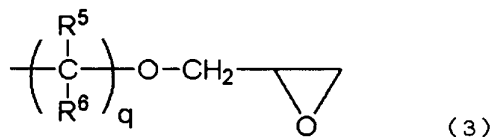
{wherein A, R^1 , R^5 , R^6 , n and q have the same definitions as in the formula (1); and s' is an integer of 1 to 3}.

5 6. A curable composition characterized by comprising a
curable polycyclic compound set forth in any of Claims 1 to 3
and a curing agent.

7. A curable composition according to Claim 6, wherein the curable polycyclic compound is a compound represented by the following formula (4):



{wherein R¹ is an alkyl group of 1 to 4 carbon atoms, a perfluoroalkyl group of 1 to 4 carbon atoms, or a fluorine atom; a is an integer of 0 to 2; b is an integer of 0 to 2; and Y is a group represented by the following formula (3):



(wherein R^5 and R^6 are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; and q is an integer of 0 to 4)).

5 8. An encapsulant for light-emitting diode, comprising a curable composition set forth in Claim 6 or 7.

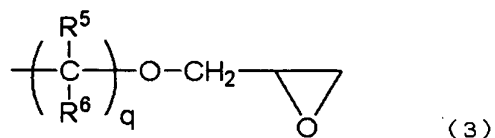
9. A light-emitting diode encapsulated by an encapsulant set forth in Claim 8.

10 10. A process for producing a polycyclic epoxy compound represented by the following formula (8):



{wherein A is a di- to hexa-valent group derived from a polycyclic hydrocarbon compound; R^1 is an alkyl group of 1 to 4 carbon atoms, a perfluoroalkyl group of 1 to 4 carbon atoms, or a fluorine atom; n is an integer of 0 to 2; m is an integer of 2 to 4; and Z is a group represented by the following formula (3):

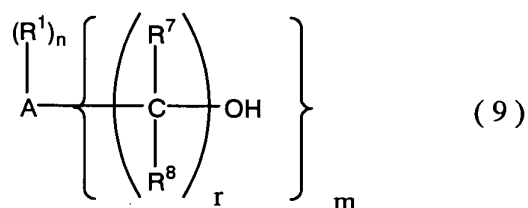
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(wherein R^5 and R^6 are each independently a hydrogen atom, a

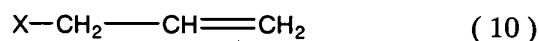
fluorine atom or an alkyl group of 1 to 4 carbon atoms; and q is an integer of 0 to 4)), which process is characterized by comprising the following steps (a) to (c):

a step (a) of reacting a polycyclic hydroxy compound
5 represented by the following formula (9):



{wherein A, R¹, n and m have the same definitions as in the
10 formula (8); R⁷ and R⁸ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; and r is an integer of 0 to 4}, with an alkali metal, an alkaline earth metal or an organometal compound containing such a metal to obtain an alcoholate,

15 a step (b) of reacting the alcoholate obtained in the step (a), with an allyl group-containing compound represented by the following formula (10):

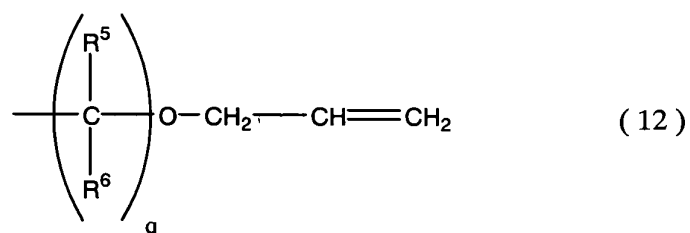


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(wherein X is a halogen atom or a sulfonyloxy group) to obtain a polycyclic allyl compound represented by the following formula (11):



[wherein A, R¹, n and m have the same definitions as in the formula (8); and W is a group represented by the following
5 formula (12):



{wherein R⁵, R⁶ and q have the same definitions as in the
10 formula (3)}], and

a step (c) of oxidizing the polycyclic allyl compound obtained in the step (b).

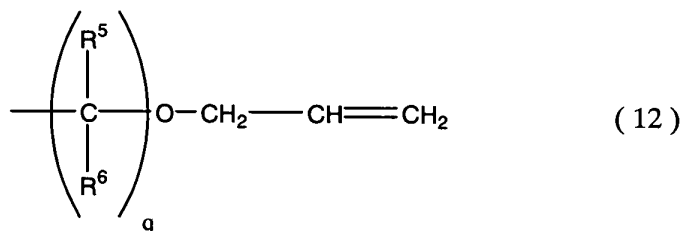
11. A polycyclic allyl compound represented by the following formula (11):

15



{wherein A is a di- to hexa-valent group derived from a polycyclic hydrocarbon compound; R¹ is an alkyl group of 1 to
20 4 carbon atoms, a perfluoroalkyl group of 1 to 4 carbon atoms,

or a fluorine atom; n is an integer of 0 to 2; m is an integer of 2 to 4; and W is a group represented by the following formula (12):



5

(wherein R⁵ and R⁶ are each independently a hydrogen atom, a fluorine atom or an alkyl group of 1 to 4 carbon atoms; and q is an integer of 0 to 4)).